WHAT IS CLAIMED IS:

1. A method of making a light-emitting device, the method comprising:

bonding a layer of a reflective material with a layer of p-doped material,

wherein:

the light-emitting device comprises a multi-layer stack of materials including the layer of p-doped material, a light-generating region, and a first layer;

the first layer includes a surface having a dielectric function that varies spatially according to a pattern; and

the reflective material is capable of reflecting at least about 50% of light generated by the light-generating region that impinges on the layer of reflective material.

2. The method of claim 1, further comprising, before bonding the layer of the reflective material with the layer of p-doped material, bonding the first layer with a substrate, the multi-layer stack of materials being between the substrate and the layer of reflective material.

3. The method of claim 2, further comprising forming a bonding layer between the first layer and the substrate.

4. The method of claim 2, further comprising removing the substrate.

5. The method of claim 4, further comprising lapping and polishing steps after removing the substrate.

6. The method of claim 4, wherein the substrate is removed after bonding the layer of the reflective material with the first layer.

7. The method of claim 4, wherein removing the substrate includes heating a bonding layer disposed between the first layer and the substrate.

8. The method of claim 7, wherein heating the bonding layer decomposes at least a portion of the bonding layer.

9. The method of claim 7, wherein heating the bonding layer including exposing the bonding layer to radiation emitted by a laser.

10. The method of claim 9, wherein removing the substrate includes exposing the substrate using a laser liftoff process.

11. The method of claim 4, wherein removing the substrate results in the surface of the first layer becoming substantially flat.

12. The method of claim 4, further comprising, before forming the pattern in the surface of the first layer, planarizing the surface of the first layer after the first substrate is removed.

13. The method of claim 12, wherein planarizing the surface of the first layer includes chemical-mechanical polishing the surface of the first layer.

14. The method of claim 12, wherein planarizing the surface of the first layer reduces a roughness of the surface of the first layer to greater than about $\lambda/5$, where λ is a wavelength of light that can be emitted by the first layer.

15. The method of claim 4, further comprising forming the pattern in the surface of the first layer.

16. The method of claim 15, wherein forming the pattern includes using nanolithography.

17. The method of claim 15, wherein the pattern has features that are greater than about $\lambda/5$, where λ is a wavelength of light that can be emitted by the first layer.

18. The method of claim 1, further comprising disposing a substrate on the layer of reflective material.

19. The method of claim 1, further comprising disposing a current-spreading layer between the first layer and the light-generating region.

20. The method of claim 1, wherein the light-emitting device is selected from the group consisting of light-emitting diodes, lasers, optical amplifiers, and combinations thereof.

21. The method of claim 1, wherein the light-emitting device comprises a light emitting diode.

22. The method of claim 1, wherein the light-emitting device is selected from the group consisting of OLEDs, flat surface-emitting LEDs, HBLEDs, and combinations thereof.

23. A method of making a light-emitting device, the method comprising:

disbonding a substrate bonded with a first layer,

wherein the first layer forms a portion of a multi-layer stack of materials that includes a light-generating region, and the method forms a light-emitting device in which a surface of the first layer has a surface with a dielectric function that varies spatially according to a pattern.

24. The method of claim 23, further comprising lapping and polishing steps after disbonding the substrate.

25. The method of claim 23, wherein disbonding the substrate includes heating a bonding layer disposed between the first layer and the substrate.

26. The method of claim 25, wherein heating the bonding layer decomposes at least a portion of the bonding layer.

27. The method of claim 25, wherein heating the bonding layer including exposing the bonding layer to radiation emitted by a laser.

28. The method of claim 27, wherein disbonding the substrate includes exposing the substrate using a laser liftoff process.

29. The method of claim 23, wherein disbonding the substrate results in the surface of the first layer becoming substantially flat.

30. The method of claim 23, further comprising planarizing a surface of the first layer after the first substrate is disbonded.

31. The method of claim 30, wherein planarizing the surface of the first layer includes chemical-mechanical polishing the surface of the first layer.

32. The method of claim 30, wherein planarizing the surface of the first layer reduces a roughness of the surface of the first layer to greater than about $\lambda/5$, where λ is a wavelength of light that can be emitted by the first layer.

33. The method of claim 23, further comprising, after disbonding the substrate, forming the pattern in the surface of the first layer.

34. The method of claim 33, wherein forming the pattern includes using nanolithography.

35. The method of claim 33, wherein the pattern has features that are greater than about $\lambda/5$, where λ is a wavelength of light that can be emitted by the first layer.

36. The method of claim 23, wherein the first layer comprises a layer of an n-doped material, the multi-layer stack further includes a layer of p-doped material, and the light-generating region is between the layer of p-doped material and the layer of n-doped material.